

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000312**Date Inspected:** 20-Jul-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Huang Wei and Xu Bing**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** N/A**Summary of Items Observed:**

The CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the welding qualification testing pertinent for the welding qualification records (PQRs) PQR HP2007249-1 and PQR HP2007247-2 scheduled for this project. ZPMC, welder Zhu Hai Ping was observed by the QA Inspector making preparation for the PQR identified as HP2007249-1 (Production procedure WPS criteria (AWS 5.13) using the shielded metal arc welding (SMAW) process in the overhead (4G) position with the 4.0 mm diameter electrode designated as E7018-1, brand name THJ506Fe-1, base metal was designated as A-709 Grade HPS485W, Heat # 06103565N). Before the welding started, the QA inspector performed dimensional inspection to the test coupon pertinent to the PQR HP2007249-1. The QA inspector observed that the length of the test specimen was 600 mm without discarded area. ZPMC tack welded two sections (run on areas) of approximately 100 mm of length as discarded areas. See digital photographs below. The QA inspector had a conversation with the ZPMC Welding Engineer Huang Wei with ZPMC Technical Department and ABF QA inspector Kevin Dye. The QA inspector brought to Mr. Huang and Mr. Dye attention that the test coupon did not have a discard area as per AWS D1.5-02 figure 5.1. Mr. Huang relayed to the QA inspector that ZPMC did not have more material A709 HPS 485W at test lab therefore ZPMC tacked two sections of A709 HPS485W as run on tabs. The QA inspector had a conversation with Caltrans Task Leader Dave McClary. The QA inspector informed Mr. McClary about the actual length of test specimen. Mr. McClary relayed to Mr. Huang, Mr. Dye and the QA inspector that as per figure 5.1 WPS Qualification-Test plate A AWS D1.5 2002, the macroetch specimen was required to be taken at 600 mm. Mr. McClary added that the plate specimen needed to be longer than 600 mm in order to obtain acceptable macroetch results at the end of the joint. After Mr. Dye conversation with Nate Lindall, Mr. Dye directed ZPMC to substitute the test coupon with another that had enough length to take the 600 mm macroetch test specimen. ZPMC canceled the welding of the PQR HP2007249-1 on this date.

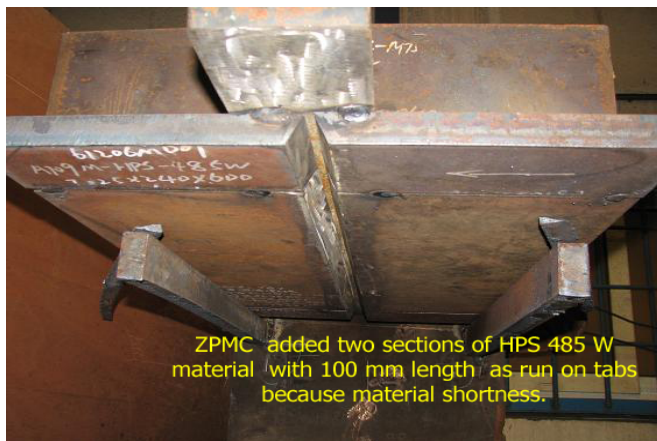
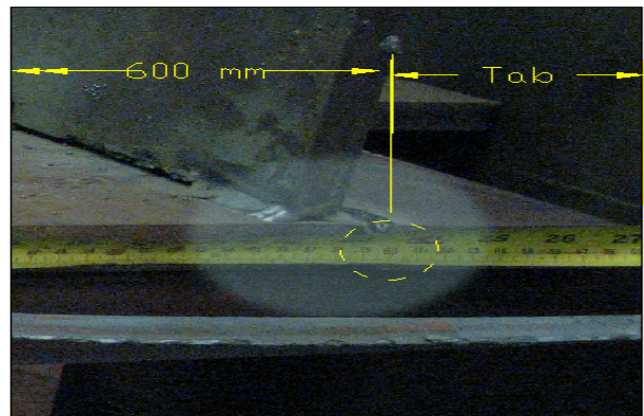
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The CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the welding qualification testing pertinent for the welding qualification record (PQR) HP2007247-2 scheduled for this project. ZPMC, welder Chen Ru Yang was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-2234 for the PQR identified as HP2007247-2. Base metal was designated as A-709 Grade 50T-2 (Heat #07200455020202). ZPMC followed the Production procedure WPS criteria (AWS 5.13) using the flux cored arc welding (FCAW-G) process in the overhead (4G) position with the 1.4 mm diameter electrode designated as E71T-1, brand name Supercored 71H. The QA Inspector verified dimensions for the test coupon, amperages, voltages, travel speeds, gas flow, heat and heat interpass temperatures. The QA inspector witnessed passes 1 through 16 (layers 1 thru 7).

The QA inspector found that the welding parameters taken by Quality Control (QC) inspector Lu Jian Ping appeared to be accurate and in accordance with the contract documents.

The QA inspector performed a final visual weld inspection to the test coupon and observed that the weld reinforcement and found that welds appeared to be in compliance with the contract documents. Caltrans lot # B71-044-07 was assigned to this PQR testing.



## Summary of Conversations:

As noted above.

## Comments

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This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Acuna,Alfredo	Quality Assurance Inspector
<b>Reviewed By:</b>	McClary,David	QA Reviewer

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